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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,900	04/15/2004	Mark Thomas Eckert	200404	7578

7590 08/17/2006  
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Cuyahoga Falls, OH 44223

EXAMINER
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NGUYEN, XUAN LAN T

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/824,900

Applicant(s)

ECKERT ET AL.

Examiner

Lan Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7, 10, 16, 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Re: claims 7, 16 and 20, it is improper to recite trademarks in the claims.
- Re: claims 10 and 19, line 9 of claim 10 and line 10 of claim 9 recite, "covering slot wall portionss with a lug cap". It is believed that a lug cap covers only one slot wall portion as argued and amended. Claims 10 and 19 are being treated as having an individual lug cap covering only one slot wall portion.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Edmisten.

Re: claim 1, Edmisten shows a protective lug cap assembly, in figure 18, for protection of an individual lug of a friction brake disc 86, wherein said disc has a periphery, and said disc has a plurality of circumferentially spaced slots 88, separating a plurality of circumferentially spaced lugs, wherein said slots are separated by a distance and disposed for engagement by a spline of a torque device, each of said arcuate slots having two generally radially extending wall portions 90, 91, wherein said wall portions have a top, a bottom 89, and opposing sides, and a bottom surface extending between and interconnecting said wall portion bottoms, as in the present invention, comprising: a lug cap 85 having a lug cap face 100, wherein said lug cap covers only one of said slot wall portions and extends circumferentially away from said slot on said slot wall top and said slot wall opposing sides, covering a portion of the lug as shown, and wherein said lug cap face is a portion of the lug cap which covers said slot wall portion; a load bearing fastening device, 105, operative to fasten the lug cap to the individual lug, such that said lug cap does not contact said slot wall portion.

Re: claim 3, Edmisten shows the outer periphery.

Re: claims 10 and 12, the discussion for the rejection of claims 1 and 3 meet the claimed limitations of claims 10 and 12.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guichard in view of Crossman et al. and further in view of Edmisten.

Re: claims 1 and 9, Guichard shows a protective lug cap assembly for protection of an individual lug of a friction brake disc 1, wherein said disc has a periphery, and said disc has a plurality of circumferentially spaced slots 3, separating a plurality of circumferentially spaced lugs, wherein said slots are separated by a distance and disposed for engagement by a spline of a torque device, each of said arcuate slots having two generally radially extending wall portions, wherein said wall portions have a top, a bottom, and opposing sides, and a bottom surface extending between and interconnecting said wall portion bottoms, as in the present invention, comprising: a lug cap 2 having a lug cap face 9, wherein said lug cap covers one of said slot wall portions and extends circumferentially away from said slot on said slot wall top and said slot wall opposing sides, covering the lug, and wherein said lug cap face is a portion of the lug cap which covers said slot wall portion; a load bearing fastening device, rivets not

numbered, operative to fasten the lug cap to the individual lug. Guichard is silent of the location of the lug cap in relation to said slot wall portion. Guichard's cap also covers the entire lug and two slot wall portions as shown. Crossman et al. teach the concept of having the torque from the spline transferred to the brake disc through the rivets and not the slot wall portion in column 1, lines 1-30, in order to increase the life of the brake disc and avoiding high stress area. Edmisten teaches the concept of having an individual cap covering only one slot wall portion and a portion of the lug in order to increase flexibility to fit a variety of brake discs having different sizes of lugs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Guichard's cap to cover only one slot wall portion as taught by Edmisten and to locate the cap so that the torque would be transferred via rivets instead of the slot wall portion as taught by Crossman in order to increase the life of the brake disc and to increase flexibility to fit a variety of brake discs having different sizes of lugs as taught by Edmisten.

Re: claims 2 and 8, these are considered to be engineering design choices.

Re: claim 3, Guichard shows the out periphery.

Re: claim 4, Crossman shows the inner periphery in figure 13.

Re: claims 5-7, these materials are considered to be well known materials to be used in aircraft brakes for their excellent ability to withstand high temperatures and thermal shocks.

Re: claims 10-29, Guichard shows the structure of the cap and the lug as claimed. Crossman teaches the concept of transferring torque via rivets and not the slot

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wall portion as claimed. Edmisten further teaches the concept of having one cap covering one slot wall portion as claimed. The discussion above states the reasons and motivations for one of ordinary skill in the art to combine the three references.

### ***Response to Arguments***

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Berger, Zarembka and Hammond show various other caps covering lugs of brake discs and the materials used in aircraft brake assemblies.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Nguyen whose telephone number is (571) 272-7121. The examiner can normally be reached on Monday through Friday, 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan can be reached on (571) 272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lan Nguyen  
Primary Examiner  
Art Unit 3683

 8/15/06